AS/NZS 4024.3202:2021

Australian/New Zealand Standard™

Safety of machinery

Part 3202: Plastics and rubber machines — Injection moulding machines — Safety requirements (ISO 20430:2020, MOD)

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The following are represented on Committee SF-041:

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First published as AS 4024:3202:2021.

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, SF-041, *Safety of Machinery.*

The objective of this document is to specify the essential safety requirements for the design and construction of injection moulding machines for the processing of plastics and/or rubber, and to provide information for their safe use.

This document is applicable only to injection moulding machines with hydraulic and/or electrical drives for platen movement.

This document deals with all significant hazards, hazardous situations and events relevant to injection moulding machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (refer to Annex A) during the life cycle of the machinery (refer to AS/NZS 4024.1201:2014, Clause 5.4).

The following are not covered —

(a) machines on which the clamping unit can only be operated by the physical force of the operator;

(b) machines for which the hydraulic jack can only be manually operated;

(c) injection blow moulding machines;

(d) machines for reaction injection moulding;

(e) compression moulding machines and transfer moulding machines;

(f) direct-on sole moulding machines, unit sole and footwear component moulding machines, full shoe and boot moulding machines;

(g) design of an exhaust system; and

(h) design and construction of the mould.

NOTE Moulds and exhaust systems are not part of the machinery.

This document is not applicable to injection moulding machines which are manufactured before the date of its publication.

This document is an adoption with national modifications, and has been reproduced from, ISO 20430:2020, *Plastics and rubber machines — Injection moulding machines — Safety requirements*.

The modifications set out in Appendix ZZ are additional requirements, which have been added at the end of the source text. Appendix ZZ lists the variations to ISO 20430:2020 for the application of this document in Australia and New Zealand.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

Contents

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 270, *Plastics and rubber machines*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 145, *Plastics and rubber machines*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is a type-C standard as stated in ISO 12100:2010.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

— machine manufacturers (small, medium and large enterprises);

— health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

— machine distributors, resellers, rebuilders and integrators;

— machine users/employers (small, medium and large enterprises);

— machine operators/employees (e.g. trade unions, organizations for people with special needs);

— service providers, e.g. for maintenance (small, medium and large enterprises).

The above-mentioned stakeholder groups have been given the possibility to participate in the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

NOTES

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1 Scope

This document specifies the essential safety requirements for the design and construction of injection moulding machines for the processing of plastics and/or rubber and provides information for their safe use.

This document is applicable only to injection moulding machines with hydraulic and/or electrical drives for platen movement.

This document deals with all significant hazards, hazardous situations and events relevant to injection moulding machines, when they are used as intended and under conditions of misuse which are reasonably foreseeable by the manufacturer (see Annex A) during the life cycle of the machinery (see ISO 12100:2010, 5.4).

The following are not covered:

— machines on which the clamping unit can only be operated by the physical force of the operator;

— machines for which the hydraulic jack can only be manually operated;

— injection blow moulding machines;

— machines for reaction injection moulding;

— compression moulding machines and transfer moulding machines;

— direct-on sole moulding machines, unit sole and footwear component moulding machines, full shoe and boot moulding machines;

— design of an exhaust system;

— design and construction of the mould.

NOTE Moulds and exhaust systems are not part of the machinery.

This document is not applicable to injection moulding machines which are manufactured before the date of its publication.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 1402:2009, *Rubber and plastics hoses and hose assemblies — Hydrostatic testing*

ISO 3744:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering methods for an essentially free field over a reflecting plane*

ISO 3746:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*

ISO 3747:2010, *Acoustics — Determination of sound power levels and sound energy levels of noise sources using sound pressure — Engineering/survey methods for use in situ in a reverberant environment*